



DEPARTMENT OF THE ARMY
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IN REPLY REFER TO: WESFV

19 October 1972

SUBJECT: Transmittal of Progress Report

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semination of Earth Resources Survey
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We are inclosing our report of progress on ERTS Project 281 for the period 1 August - 30 September 1972 (Incl 1). It should be noted that no imagery of the study area has been received to date.

FOR THE DIRECTOR:

1 Incl
as

F. R. BROWN
Engineer
Technical Director

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(E72-10169) SEDIMENT PATTERN CORRELATIONS
WITH INFLOW AND TIDAL ACTION Progress
Report, 1 Aug. - 30 Sep. 1972 W.E. Grabau
(Corps of Engineers, Vicksburg, Miss.)
19 Oct. 1972 3 p
CSCl 08H G3/13

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00169

Progress Report on ERTS Project 281

a. Title of Investigation

Sediment Pattern Correlations with Inflow and Tidal Action, Proposal No. MMC 281.

b. Principal Investigator

Warren E. Grabau, GSFC ID DE328

c. Problems

Since the launch of the ERTS satellite, cloud cover over the Chesapeake Bay study area has ranged from 60 percent to 100 percent. As a result, no imagery of the study area has been received, and planned tests of the performance of computer programs to read and process computer-compatible tapes and to search ERTS imagery for identification of areas where sediments and suspended materials are located have not been completed.

d. Work Accomplished 1 Aug - 30 Sep 72

A mathematical model to compute transmittance of various wavelengths through the atmosphere has been formulated. The model considers atmospheric water vapor density, temperature, density, tone density, aerosol particle density, and height above the ground.

A preliminary computer program for searching digitized images and identifying areas where sediments and suspended materials are located was formulated, and preliminary tests were conducted using assigned density values.

Work Contemplated 1 Oct - 30 Nov 72

Sensitivity tests will be conducted on the atmospheric transmittance model to evaluate the significance of each input parameter. The results will provide an indication of atmospheric parameters that must be measured for radiometric analysis of ERTS imagery.

ERTS overpasses of the study area supported by acquisitions of aircraft imagery and ground truth data are scheduled to occur on 10 and 28 October.

Aircraft support will be provided by NASA, and assistance in collecting ground truth data at test sites in the C&D Canal and the Rappahannock, York, Choptank, and Wicomico Rivers will be provided by personnel and boats from the U. S. Army Engineer District, Philadelphia, U. S. Army Engineer District, Norfolk, Chesapeake Biological Laboratory, Chesapeake Bay Institute, and National Marine Fisheries Service. Laboratory facilities at Chesapeake Biological Laboratory will be utilized for analyses that must be made within a short time after sample collection (e.g. suspended matter, dissolved oxygen). All other analyses will be completed at the U. S. Army Engineer Waterways Experiment Station.

A data collection platform connected to a water quality analyzer for monitoring water temperature, conductivity, pH, and dissolved oxygen and a multichannel recorder connected to sensors for monitoring water temperature and incident and reflected solar spectral radiation will be used to collect data during the periods 6-14 October and 24 October -1 November at stations in the Choptank and Rappahannock Rivers.

The data analysis plan will be finalized upon receipt of initial ERTS data.

- e. Significant Results: None.
- f. Published Articles, Papers, Reports, Talks: None.
- g. Recommendations: None.
- h. Changes in Standing Order Forms: None.
- i. ERTS Image Descriptor Forms Submitted: None.
- j. Data Request Forms Submitted: None.
- k. Other Information: None.